

Introduction and aim

Determining the exact location of an incident is one of the most important aspects of an emergency call. Previous studies have shown that over 41% of all responses given by the callers concerning location turn out to be problematic (Kuusk 2020). A significant part of locational problems is related to the map in use.

Map related problems have previously been noted in studies concerning developing countries where the map application used by the emergency

services does not always correspond to the real circumstances (Natrass et al. 2017).

However, the map application used by the Estonian Emergency Services is detailed and accurate.

We shall look at the interactional problems that map applications cause in Estonian emergency calls. The aim is to determine what causes map related location problems.

We argue that the map application can cause problems despite its apparent quality and the amount of its additional details. Most cases of map related problems stem from the call-taker's inability to find the correct location on the map.

The data come from the Corpus of Spoken Estonian of the University of Tartu. The used **method** is conversation analysis (see Liddicoat 2007).

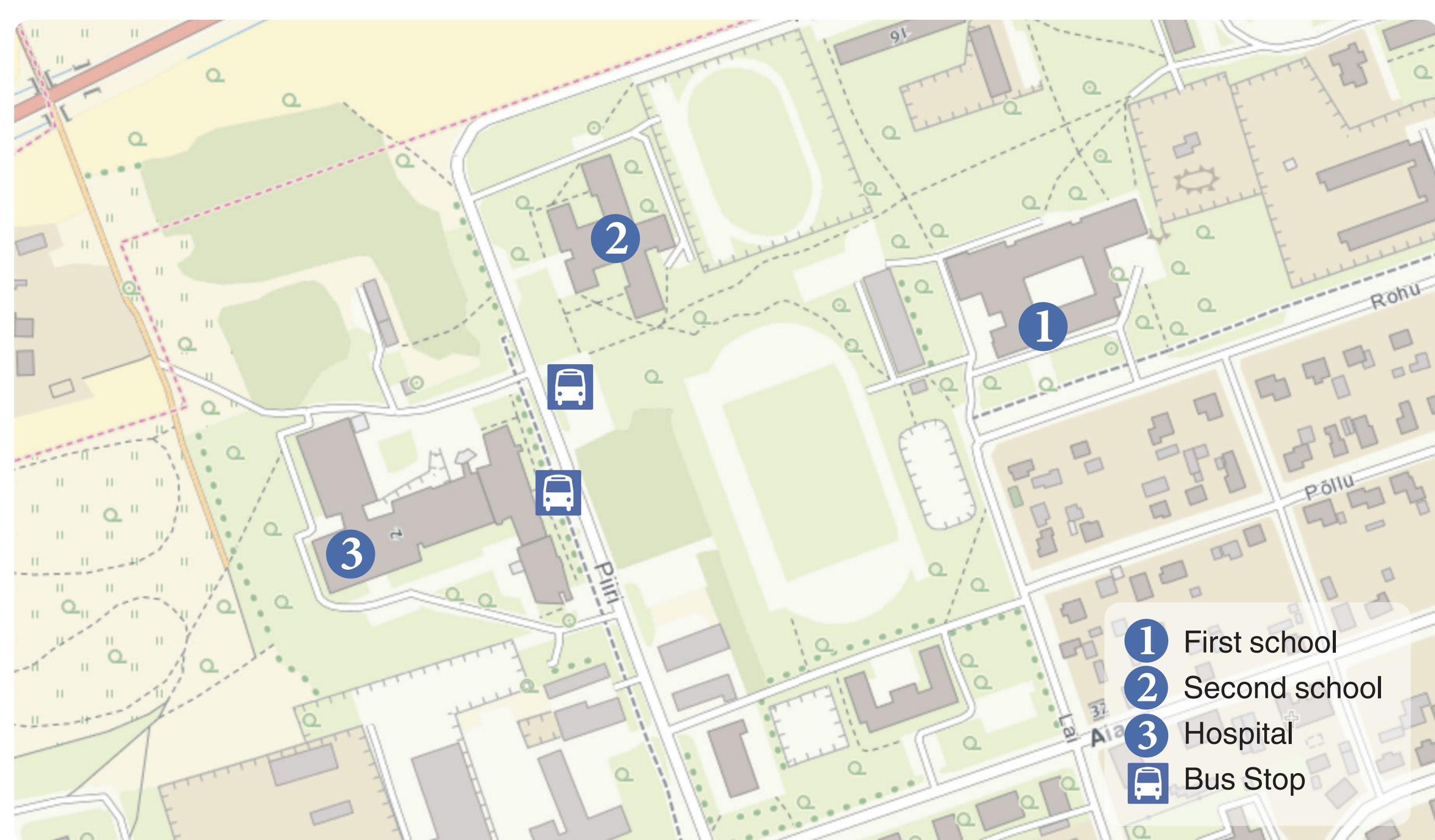
Map Related Problems in Estonian Emergency Calls

(1) Caller's (C) and call-taker's (CT) preferred landmarks

- 01 C: need=on=need eem (0.8) jäävad=sia haigla poole=peale.
these are these umm they are here on the hospital side
- 02 (0.7)
- 03 CT: no mina=i=tea kus=se aigla on te räägite Tallinnaga sel[lepärast ma=ta]hang
well I don't know where the hospital is you're talking to Tallinn, that's why I
- 04 *addressi üles leida.*
want to find the address.
- 05 C: [* aa::: *]
oooohh
- 06 (1.1)
- 07 CT: et kumb se [sis võib olla.]
so which one could it be
- 08 C: [mis- mis=on] see koolima[ja:: {-}] ((kõrvale))
what- what is the school ((unintelligible)) ((asking a bystander))
- 09 CT: [kas=seal: selle Piiri] koolimaja juures
is there a bus stop near the Piiri
- 10 on=õ bussipeatus.
schoolhouse
- 11 (1.4)
- 12 C: ee jah on kü[ll.]
um yes there is
- 13 CT: [on] bussipeatus.
there is a bus stop.
- 14 (0.5)
- 15 C: ja [sin=on] kaks staadionit on [uus ja on vanem]
and there are two stadiums, a new and an old one
- 16 CT: [{}-] [[seal=on see se]al=on]
((unintelligible)) there is this there is
- 17 (0.5)
- 18 CT: se=on ai:gla se=i=ole koolimaja
it is a hospital it's not a schoolhouse

In an incident near two schools the call-taker is not able to find the correct location without the exact address. The caller uses the hospital as a landmark (I 1) but the call-taker dismisses it by saying they do not know where the hospital is because they themselves are not a local (I 3-4). Subsequently, the call-taker

asks about bus stops that could be near the incident scene (I 9-10), indicating what landmarks are preferred by them. Later it can be seen that the call-takers indeed have hospitals marked on their maps, therefore they could be used in the location process (I 18). See map 1.



Map 1. Place of the incident in excerpt 1 (Land Board)

(2) Official and unofficial locators in a call about a fallen tree

- 01 C: tere:: (.) lihtsalt annan teada=et puu on üle maante Vändra Viljandi:
hello, I'm just letting you know that there is a tree on the road from Vändra
- 02 *kolmekümne kahe:: (0.3) kolmekümne teisel kilomeetril.*
to Viljandi on the thirty second kilometre.
((Lines about determining the type of road removed))
- 03 (0.5)
- 04 CT: mm * mhmh * .hhh et se=on=sis=ääääää > Pärnu Rakvere Sõmeru maante. <
uhuh, so it is the Pärnu Rakvere Sõmeru highway then
- 05 (1.4)
- 06 C: võib küll olla jah,
might be so, yes

The caller gives an exact location by saying what road they are on and the kilometre of the incident (I 1). The latter is the Emergency Services' preferred way of locating a site on the roads. Proffered road name is not official but indicates a main route from one town to another. The call-taker therefore concludes the official name themselves (I 4) but does not identify the correct road. The call-taker may have gotten too focused on the first part of the location given – Vändra – and searched for “big roads” (not shown in excerpt) around it without considering the latter part of the location given. See map 2.



Map 2. Place of the incident in excerpt 2 (Land Board)

(3) Call-taker does not catch necessary information

- 01 C: Haljala vallamaja ette /-/-/ ((juhtum kusututatud))
in front of the Haljala parish municipality building ((incident redacted))
- 02 (1.2) ((typing sounds))
- 03 CT: mm:: nhhhhhh ja mis address seal=on.
umm and what's the address there
- 04 (0.7)
- 05 C: ää:: Võsu:: Mere:: Mere:=mingi tänav (.) ma=i=tea Mere kuus äkki, oli=vä
Võsu borough Mere something street I don't know 6 Mere street maybe, was it
- 06 (1.3) ((typing sounds))
- 07 C: Oo kõrts=jaa Seitsmes Taevas on=sin lähedal.
Oo bar and nightclub Seitsmes Taevas are near here.
- 08 (0.5)
- 09 CT: mhm ja mis- mis=seal lähedal on
mhm and what- what's located near there?

The caller requests help, saying the incident occurred in front of a parish municipality building (I 1). The call-taker does not consider this an adequate location and asks for an address (I 3), to which the caller responds first with an approximate address, then with a detailed but uncertain one (I 5). Not getting a response from the call-taker, the caller expands on the location by naming some near-by establishments (I 7). Despite the caller giving an

address, the call-taker responds to the latter part of the information by asking about the near-by locations (I 9). There might be multiple reasons behind the decision of the call-taker's turn. First, the caller's uncertain knowledge could make them untrustworthy regarding this information. Second, as the call-taker was heard typing after the official address was presented, they might have not heard or paid attention to it.

Results and discussion

Research shows three main causes for map related problems in Estonian emergency calls.

- The call-taker's lack of map-reading ability.** This is most evident in ex 2, where the call-taker does not find the most common route from one town to another. The importance of map-reading has also been acknowledged earlier (Vries, Geduld 2015). In addition to geographical

knowledge, better utilization of the emergency service's map application would also have alleviated the interactional problem in ex 1.

- Call-taker's lack of local knowledge,** which has previously been noted as a major contributor for location problems in emergency calls (Normark, Randall 2005; Natrass et al. 2017). This is most evident in ex 1, where the call-taker expresses verbally that they do not have the necessary information because they are not local. The lack of local knowledge

is more covert in other excerpts where the call-taker does not possess the same information.

- The human ability to process information,** which is an inevitable source of interactional problems. Every situation that involves a person has some human error that ultimately cannot be prevented, for instance problems with hearing, ability to remember or note information, e.g. ex 3.

Transcription

| | | | |
|-------|-----------------------|-------------|-------------------|
| (.) | micropause | Underlining | stress |
| (0.7) | timed pause | = | latching of words |
| [] | speech overlaps | : | stretched sound |
| { } | unclear section | ** | quieter voice |
| (()) | transcriber's comment | > < | quickened pace |

References

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